

IN THE MATTER OF:

Ringwood Landfill/Mines Superfund Site

Borough of Ringwood
Respondent

ADMINISTRATIVE ORDER FOR
INVESTIGATIVE WORK

U.S. EPA Region II
CERCLA Docket No. 02-2005-2033

Proceeding Under Section 106(a) of the
Comprehensive Environmental Response,
Compensation, and Liability Act, as
amended, 42 U.S.C. § 9606(a)

TABLE OF CONTENTS

I.	JURISDICTION AND GENERAL PROVISIONS	1
II.	PARTIES BOUND	1
III.	STATEMENT OF PURPOSE	2
IV.	DEFINITIONS	2
V.	FINDINGS OF FACT	4
VI.	CONCLUSIONS OF LAW	8
VII.	DETERMINATIONS	8
VIII.	ORDER	9
IX.	WORK TO BE PERFORMED	10
X.	EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS	16
XI.	QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION	18
XII.	SITE ACCESS AND INSTITUTIONAL CONTROLS	19
XIII.	COMPLIANCE WITH OTHER LAWS	20
XIV.	RETENTION OF RECORDS	20
XV.	DELAY IN PERFORMANCE/STATUTORY PENALTIES	21
XVI.	OTHER CLAIMS	22
XVII.	INSURANCE	22
XVIII.	FINANCIAL ASSURANCE	22
XIX.	INTEGRATION/APPENDICES	24
XX.	EFFECTIVE DATE AND SUBSEQUENT MODIFICATION	24
XXI.	TERMINATION AND SATISFACTION	24
XXII.	OPPORTUNITY TO CONFER	25
XXIII.	NOTICE OF INTENT TO COMPLY	25

**ADMINISTRATIVE ORDER
FOR SUPPLEMENTAL INVESTIGATIVE WORK**

I. JURISDICTION AND GENERAL PROVISIONS

1. This Administrative Order ("Order") is issued by the United States Environmental Protection Agency ("EPA") to the Borough of Ringwood ("Respondent"). The Order concerns the performance of supplemental investigative work ("Supplemental Investigations") at the Ringwood Mines/Landfill Site located in the Borough of Ringwood, in Passaic County, New Jersey ("Site").

2. This Order is issued to Respondent under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended, ("CERCLA") 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to Regional Administrators on May 11, 1994, by EPA Delegation Nos. 14-14-C and 14-14-D. This authority was further redelegated on November 23, 2004, by the Regional Administrator of EPA Region II to the Director of the Emergency and Remedial Response Division.

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the U.S. Department of the Interior, the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the New Jersey Department of Environmental Protection on February 24, 2005, of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal and/or State trusteeship.

II. PARTIES BOUND

4. This Order shall apply to and is binding upon Respondent and its agents, successors and assigns. Any change in ownership or legal status of the Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter the Respondent's responsibilities under this Order.

5. Respondent shall provide a copy of this Order to any successors or assigns prior to transfer of ownership rights to any of the property it owns at the Site. Respondent shall provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Order, within 14 days after the effective date of this Order or the date of retaining their services, whichever is later. Respondent shall condition any such contracts upon satisfactory compliance with this Order. Notwithstanding the terms of any contract, Respondent is responsible for compliance with this Order, and for ensuring that its employees, contractors, consultants, subcontractors and agents comply with this Order.

6. Until the completion of the Work required by this Order, Respondent shall provide a copy of this Order to any prospective owners before assets or property rights for Site properties are transferred by Respondent to a prospective owner.

III. STATEMENT OF PURPOSE

7. The objectives of this Order are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting Supplemental Investigations as more specifically set forth in the Statement of Work ("SOW") attached as Appendix A to this Order; and (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site, by conducting a Feasibility Study, if requested to do so by EPA at the completion of the Supplemental Investigations.

8. The Work conducted under this Order, as well as the investigative work conducted by EPA on the residential properties, shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP").

IV. DEFINITIONS

9. Unless otherwise expressly provided herein, terms used in this Order that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Order or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Borough" shall mean the Borough of Ringwood ("Borough"), a municipality established under the laws of the State of New Jersey in Passaic County, New Jersey.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

c. "Day" shall mean a calendar day. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

d. "Effective Date" shall be the effective date of this Order as provided in Section XVIII.

e. "EPA" shall mean the United States Environmental Protection Agency and any

successor departments or agencies of the United States.

f. "Ford" shall mean Ford Motor Company.

g. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

h. "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

i. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successors.

j. "Order" shall mean this Order, the SOW, all appendices attached hereto (listed in Section XVII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Order upon approval by EPA. In the event of conflict between this Order and any appendix or other incorporated documents, this Order shall control.

k. "Paragraph" shall mean a portion of this Order identified by an Arabic numeral.

l. "Performing Party" shall mean Ford Motor Company.

m. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*

n. "Respondent" shall mean the Borough of Ringwood..

o. "Section" shall mean a portion of this Order identified by a Roman numeral.

p. "Site" shall mean the Ringwood Mines/Landfill Superfund Site, encompassing approximately 455 acres, located in the Borough of Ringwood, which is located in the northeast corner of Passaic County, New Jersey, and which is depicted generally on the map attached as Appendix B.

q. "SOW" shall mean the Statement of Work for development of the Supplemental Investigations for the Site, as set forth in Appendix A to this Order. The Statement of Work is incorporated into this Order and is an enforceable part of this Order as are any

modifications made thereto in accordance with this Order.

r. "State" shall mean the State of New Jersey.

s. "Supplemental Investigations" shall mean the activities described in Section IX of this Order (Work To Be Performed) and in the SOW.

t. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); and (3) any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27), as well as any mixtures containing items 1 through 3 listed above.

u. "Work" shall mean all activities Respondent is required to perform under this Order, except those required by Section XIV (Retention of Records).

V. FINDINGS OF FACT

10. The Ringwood Mines/Landfill Site is located in the Borough of Ringwood ("Borough") in the northeast corner of Passaic County, New Jersey. The Site includes approximately 50 residential properties, an inactive municipal landfill, abandoned mine shafts (nearly all of which have been sealed) and filled mine pits, an industrial refuse disposal area, small surficial dumps, a municipal recycling center and a rugged, forested area within the Ringwood State Park. The Site lies within the watershed of the Wanaque Reservoir, which supplies drinking water to much of northern New Jersey. The residents in the immediate area of the Site receive their water from municipal wells which are unaffected by the Site.

11. From the 1700's through the 1930's, magnetite mining took place at the Site. The United States government activated the complex during World War II to guarantee a supply of iron for the war effort. The ore was not needed and no actual mining took place. After the war, the mines and surrounding land were sold to the Pittsburgh Pacific Company. In 1965, the Ringwood Realty Corporation ("RRC"), a subsidiary of Ford, purchased over 800 acres within the Borough, including the acreage which is now within the Site. Shortly thereafter, RRC removed substantial numbers of junked cars and other Waste Material from the Site, closed numerous mine shafts and filled some mine pits at the Site in response to a request by the Borough.

12. In 1967, RRC entered into agreements with the O'Connor Trucking and Haulage Corporation ("O'Connor") to dispose of Waste Material from the Ford automobile assembly plant located in Mahwah, New Jersey. RRC authorized O'Connor to dispose of the Mahwah Waste Material in certain mine pits and other areas on the RRC property within the Borough. O'Connor continued to dispose of wastes at this location until 1971. Contracts between Ford and O'Connor called for the disposal of cardboard and other packing materials from the plant, scrap car parts, paint sludge and scrap and dented drums containing "obsoleted hardened production

sealing and insulating stock of non-inflammable nature."

13. Borough records indicate that the Borough was aware of O'Connor's disposal activities at the Site and did not object to or prohibit these activities. Borough records also indicate that the Borough was disposing of municipal Waste Material in one or more of the areas of the Site where O'Connor was placing Ford Waste Material in the late 1960's. Some of this disposal of municipal Waste Material took place while RRC owned the Site property and prior to the Borough's acquisition of Site property on which disposal had occurred or was occurring.

14. The Borough currently owns approximately 300 acres of the Site. On November 4, 1970, the Ringwood Solid Waste Management Authority ("RSWMA"), an agency of the Borough of Ringwood, acquired 289.9 acres of the Site by Deed of Gift from RRC. The Borough of Ringwood currently owns nearly all that acreage, as well as 35.475 acres which were originally deeded by RRC to the Housing Operation with Training Opportunity (HOW TO,) a New Jersey not for profit corporation.

15. The RSWMA allowed O'Connor to continue to dispose of Ford Waste Material on its newly acquired property for at least six months. From November 1970 through approximately 1976, the RSWMA also used portions of the Site to dispose of Waste Material from the Borough and the Town of West Milford. In some areas of the Site, this municipal Waste Material is intermingled or layered with Ford Waste Material. Municipal Waste Material is known to contain hazardous substances from residential and commercial sources.

16. Unpermitted and unauthorized disposal of Waste Materials unrelated to Ford's Mahwah plant has occurred for many years on Site property currently owned by the Borough. In some areas of the Site, these Waste Materials are intermingled or layered with Ford Waste Material.

17. In 1970, RRC sold 209.9 acres of its Ringwood property to the Public Service Electric and Gas Company for a transmission line right of way and sold 140.623 acres of Ringwood Property to High Point Homes, Inc. In 1973, NJDEP accepted the donation of 109.249 acres from RRC and added the area to the Ringwood State Park.

18. In 1982, NJDEP sampled groundwater and surface water at the Site and found volatile organic compounds as well as lead and arsenic. In 1983, after receiving the sampling data and risk information, EPA added the Site to the National Priorities List ("NPL") pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605.

19. In March 1984, EPA and Ford entered into an Administrative Order on Consent ("AO 1") under Section 3013 of RCRA, 42 U.S.C. § 6934, by which Ford agreed to conduct investigations at the Site. From 1984 through 1987, Ford's contractor Woodward Clyde ("WC") conducted a Remedial Investigation ("RI") of the Site. During this RI, WC identified four sludge disposal areas. The hazardous substances detected in the paint sludge included lead, arsenic,

chromium, naphthalene, toluene, ethylbenzene, xylene, trichloroethene, and low levels of PCBs. During the RI, WC also sampled the groundwater. Elevated levels of heavy metals were found sporadically in limited areas of groundwater.

20. In June 1987, EPA issued a Unilateral Administrative Order to Ford ("AO 2"), pursuant to Section 106 of CERCLA, 42 U.S.C. § 9601 et seq., directing Ford to perform a Feasibility Study ("FS.") EPA also required Ford to conduct an endangerment assessment to evaluate any potential risk to public health and the environment from hazardous substances present at the Site. At the same time, EPA issued a Unilateral Administrative Order to Ford ("AO 3") under Section 106 of CERCLA, 42 U.S.C. § 9606, directing Ford to remove paint sludge found at the Site and dispose of the paint sludge and associated soil at an EPA-approved off-site disposal facility. Ford removed approximately 7,000 cubic yards of paint sludge and associated soil from the Site.

21. As required by AO2, Ford prepared an FS and a Risk Assessment for the Site. The Risk Assessment indicated that lifetime ingestion of arsenic, lead and thallium from the groundwater posed unacceptable risks to persons at the Site. The Risk Assessment also indicated that exposure to soils and surface water at the Site did not pose an unacceptable risk to public health and the environment.

22. Following the completion of the RI and FS, EPA presented the results of those studies to the community, sent out the plan for its preferred remedial alternative, and announced a public comment period. EPA also held a public meeting on August 17, 1988, at which it discussed its proposed plans for the Site. EPA issued a Record of Decision ("ROD") for the Site on September 29, 1988. The ROD noted that the known areas of paint sludge had been removed and that no contaminants were entering the Wanaque Reservoir. EPA selected long term monitoring of the groundwater and surface water as the appropriate remedy for the Site. EPA also required additional confirmatory sampling of the area from which most of the paint sludge had been removed.

23. In 1988, EPA formally identified Ford as a potentially responsible party at the Site under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a). Ford, through its subsidiary RRC, owned the Site during a period when disposal of Waste Materials took place at the Site. Ford also arranged for the disposal of hazardous substances at the Site by authorizing O'Connor to dispose of Ford's Mahwah plant wastes at the Site.

24. In 1989, Ford and EPA entered into an Administrative Order on Consent ("AOC") under Sections 104 and 122 of CERCLA, 42 U.S.C. § 9604, 9622, in which Ford agreed to conduct the long term monitoring program selected in the ROD. Ford agreed to conduct chemical analyses of soil, sediment and mine tailings to determine the background concentrations of metals in the area; to reevaluate the hydrogeologic data to characterize the hydrogeologic regime at the Site, and to analyze surface water as well as water in the monitoring and potable wells at or near the Site.

25. Ford conducted the investigations and sampling requirements described above. These investigations indicated that Site activities have had minimal impacts on soil and sediment quality. Furthermore, surface water quality was found to comply with regulatory criteria established for the protection of surface water bodies. Finally, the results of the required groundwater sampling indicated that contaminant levels had been reduced since the removal of waste from the Site, and those contaminants detected only appeared sporadically.

26. In 1990, EPA formally notified the Borough that it was a potentially responsible party for response costs at the Site under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a). The Borough was then, and is now, the owner of a large part of the Site and acquired the property with knowledge of the disposal of industrial waste from Ford's Mahwah plant at the Site. The Borough also owned and operated a portion of the Site during a six month period when Waste Materials from Ford's Mahwah facility were disposed of at the Site.

27. In 1993, Ford and the Borough entered into a Consent Decree by which they paid EPA for its past costs. Ford paid \$435,600 and the Borough paid \$144,700.

28. In 1993, EPA published a Notice of Intent to Delete the Site from the National Priorities List. The notice was published in the Federal Register and in a local newspaper. In this notice, EPA established a public comment period and asked for comments on its proposal to delist the Site. NJDEP concurred with this delisting proposal. EPA received no objections from the Borough or other members of the public to delisting the Site and formally deleted the Site from the NPL in November 1994.

29. Since Ford completed its removal work in 1989, it has returned to the Site three times at the request of residents or Borough officials to remove additional paint sludge and drums.

30. Certain residents of the Borough, through their attorney, notified EPA in 2004 that not all the paint sludge and other Waste Material had been removed from the Site. EPA agreed to reevaluate conditions at the Site. Ford is currently conducting a Site Reconnaissance Survey at the Site and has found significant amounts of paint sludge remaining at the Site. This paint sludge has been found in several locations, including the Cannon Mine area of the Site and the O'Connor Disposal area. The Borough is the current owner of both the O'Connor Disposal area and a large part of the Cannon Mine area.

31. Recent sampling data indicate that the paint sludge remaining at the Site contains hazardous substances including lead, arsenic, chromium, naphthalene, toluene, ethylbenzene, xylene, trichloroethene, and low levels of PCBs.

32. The hazards posed by the Site include, but are not limited to, the threat of dermal contact with, inhalation, and/or ingestion of hazardous substances at the Site and the threat of migration of hazardous substances at and from the Site. Exposure to the various hazardous substances present at the Site by dermal contact, inhalation, or ingestion may cause a variety of

adverse human health effects.

33. EPA gave the Respondent the opportunity to consent to perform the Work required by this Order but Respondent did not consent.

VI. CONCLUSIONS OF LAW

Based on the Findings of Fact set forth above, EPA has concluded that:

34. The Ringwood Mines/Landfill Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

35. The contaminants currently found at the Site, including lead, arsenic, chromium, naphthalene, toluene, ethylbenzene, xylene, trichloroethene, and PCBs, as identified in the Findings of Fact above, include "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

36. The conditions described in Paragraphs 30 and 31 of the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

37. The Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

38. Respondent is a responsible party under Section 107 of CERCLA, 42 U.S.C. § 9607. Respondent Borough is the current owner of a portion of the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(1) of CERCLA, 42 U.S.C. § 9607(a)(1). Respondent Borough was the owner and operator of the facility during a period when disposal of hazardous substances took place within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2). Respondent Borough also arranged for the disposal of hazardous substances at the Site and arranged for the transport of hazardous substances to the Site within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

VII. DETERMINATIONS

39. Based on the FINDINGS OF FACT AND CONCLUSIONS OF LAW set forth above and the entirety of the administrative record, the Director of the Emergency Response and Remedial Division has determined that the release or threatened release of hazardous substances at and from the Site may present an imminent and substantial endangerment to the public health or welfare or the environment within the meaning of Section 106(a) of CERCLA, 42 U.S.C. § 9606 (a).

40. EPA has determined that a thorough reinvestigation of the Site is necessary because additional paint sludge and other Waste Materials have been found at the Site. EPA expects to identify additional response actions to address the hazardous substances found in the paint sludge and other Waste Materials.

41. EPA has determined that Respondent is qualified to conduct the Supplemental Investigations within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) of CERCLA, 42 U.S.C. § 9604(a), if Respondent complies with the terms of this Order.

VIII. ORDER

42. Based upon the foregoing Findings of Fact, Conclusions of Law and Determinations, it is hereby Ordered that Respondent shall comply with all provisions of this Order, including, but not limited to, all appendices to this Order and all documents incorporated by reference into this Order.

43. Contemporaneously with the issuance of this Order, EPA is issuing an Administrative Order on Consent, Index No. CERCLA-02-2005-2013, to Ford Motor Company, ("Performing Party,"), which requires the Performing Party to conduct the same response actions as those required by this Order. Respondent shall make best efforts to coordinate with the Performing Party. Best efforts to coordinate shall include, at a minimum:

a. Communicating in writing within ten days of the effective date of this Order to the Performing Party stating that Respondent desires to comply with this Order and to participate in the performance of the Work or, in lieu of performance, to pay for the performance of the Work;

b. Submitting within 20 days of the effective date of this Order a good-faith offer to the Performing Party to perform the Work in whole or in part or, in lieu of performance, to pay for the Work, in whole or in part, and

c. Engaging in good-faith negotiations with the Performing Party to perform or, in lieu of performance, to pay for the Work required by this Order if the Performing Party refuses Respondent's first offer.

44. To the extent that the Performing Party is performing or has stated an intent to perform any Work required by this Order, pursuant to any other order or agreement with EPA, Respondent shall make best efforts to participate in the performance of the Work with the Performing Party. Best efforts to participate shall include, at a minimum:

a. performance of those portions of the Work as agreed by Respondent and the Performing Party to be undertaken by Respondent, and

b. payment of all amounts as agreed by Respondent and the Performing Party to be paid

by Respondent if, in lieu of performance, Respondent has offered to pay in whole or in part for the Work required by this Order,

45. Respondent shall provide EPA with notice of its intent to comply with this Order, consistent with Paragraph 98 below. In addition, Respondent shall notify EPA in writing within five days of the rejection, if any, by the Performing Party of Respondent's offer to perform or, in lieu of performance, to pay for a reasonable share of the Work.

46. The undertaking or completion of any requirement of this Order by any other person, with or without the participation of Respondent, shall not relieve Respondent of its obligation to perform each and every other requirement of this Order.

47. Any failure to perform, in whole or in part, any requirement of this Order by any other person with whom Respondent is coordinating or participating in the performance of such requirement shall not relieve Respondent of its obligation to perform each and every requirement of this Order.

IX. WORK TO BE PERFORMED

48. The Work to be performed under this Order includes the Supplemental Investigations and other work set forth in the SOW. In addition to undertaking the Work described in the SOW, Respondent shall cooperate with investigative activities performed by EPA and its contractors to evaluate residential properties at the Site. This Order does not apply to or address any actions to remove or remediate Solid Waste or other hazardous substances, pollutants or contaminants that are identified in connection with the Supplemental Investigations that are undertaken in connection with this Order.

49. The Work conducted under this Order is subject to approval by EPA and that Work, as well as the investigative work conducted by EPA on the residential properties, shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"). Respondent shall conduct all Work under this Order in compliance with CERCLA, the NCP, and all applicable EPA guidances, policies, and procedures.

50. Selection of Contractors, Personnel. All Work performed under this Order shall be under the direction and supervision of qualified personnel. Ford has already begun the Work which is the subject of this Order and, therefore, Respondent shall coordinate with Ford as to the selection of the Project Coordinator and other contractors used to perform the Work under this Order.

51. EPA has designated Joseph Gowers, of the Emergency Response and Remedial Division, Region II, as its Remedial Project Manager ("RPM.") EPA will notify Respondent of a change of its designated RPM. Except as otherwise provided in this Order, Respondent shall

direct all submissions required by this Order to the RPM.

Submissions shall be sent to:

Joseph Gowers, Project Manager
Ringwood Mines/Landfill Superfund Site
U.S. EPA Region II
290 Broadway, 19th Floor
New York, NY 10007-1866

52. EPA's RPM shall have the authority lawfully vested in an RPM by the NCP. In addition, EPA's RPM shall have the authority consistent with the NCP to halt any Work required by this Order, and to take any necessary response action when he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA RPM from the area under study pursuant to this Order shall not be cause for the stoppage or delay of Work.

53. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the Supplemental Investigations as required by Section 104(a) of CERCLA, 42 U.S.C. § 9604(a). This person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the Supplemental Investigations Work Plan. Respondent and its employees, agents, contractors and consultants shall cooperate with EPA in its efforts to oversee Respondent's implementation of this Order.

54. Activities and Deliverables. Respondent shall conduct activities and submit plans, reports or other deliverables as provided by the attached SOW, which is incorporated by reference, for the Supplemental Investigations. All such Work shall be conducted in accordance with the provisions of this Order, the SOW, CERCLA, the NCP and EPA guidance, including, but not limited to, the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Usability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and guidance referenced therein, and guidances referenced in the SOW, as may be amended or modified by EPA. The general activities that Respondent is required to perform are identified below, followed by a list of plans, reports and other deliverables. The tasks that Respondent must perform are described more fully in the SOW and guidances. The activities, plans, reports and other deliverables identified below shall be developed as provided in the Supplemental Investigations Work Plan, including the Supplemental Investigations Work Plan Modules, and Sampling and Analysis Plan and shall be submitted to EPA as provided. All Work performed under this Order shall be in accordance with the schedules herein or established in the SOW, and in full accordance with the standards, specifications, and other requirements of the Supplemental Investigations Work Plan, including the Supplemental Investigations Work Plan Modules and the Sampling and Analysis Plan, as initially approved or modified by EPA, and as may be amended or modified by EPA from time to time. In accordance with the schedules established in this Order or in the SOW, Respondent shall

submit to EPA four paper copies of all plans, reports and other deliverables required under this Order, the SOW and the Supplemental Investigations Work Plan, including the Supplemental Investigations Work Plan Modules. Respondent shall also provide EPA with one electronic copy of all plans, reports and other deliverables required under this Order, and four extra paper copies of all diagrams, figures and/or drawings incorporated into these deliverables. At the same time, Respondent shall submit to NJDEP three copies of all plans, reports and other deliverables required under this Order, the SOW and the Supplemental Investigations Work Plan, including the Supplemental Investigations Work Plan Modules. All plans, reports and other deliverables will be reviewed and approved by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions). Upon EPA's request, Respondent shall also provide copies of draft final plans, reports or other deliverables to Community Advisory Groups, or any other entities as directed by EPA.

a. Scoping. EPA will determine the Site-specific objectives of the Supplemental Investigations and devise a general management approach for the Site, as stated in the attached SOW. Respondent shall conduct the remainder of scoping activities as described in the attached SOW and referenced guidances. At the conclusion of the project planning phase, Respondent shall provide EPA with the following plans, reports and other deliverables:

(1) Supplemental Investigations Work Plan. Respondent shall implement the Work Plan for the Field Reconnaissance Survey, which was approved, with conditions, by EPA on December 2, 2004. Within 30 days of completion of the field investigations provided for in the Work Plan for the Field Reconnaissance Survey, Respondent shall submit to EPA an Interim Report which summarizes the results of the field investigations. Within 30 days of Respondent's submittal of the Interim Report, Respondent shall submit a Supplemental Investigations Work Plan which meets the requirements outlined in the attached SOW. Upon approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), the Supplemental Investigations Work Plan shall be incorporated into and become enforceable under this Order.

(2) Sampling and Analysis Plan. Within 30 days after submitting the Interim Report discussed above in subparagraph 54. a.1., Respondent shall submit a Sampling and Analysis Plan to EPA for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions). This plan shall consist of a Field Sampling Plan ("FSP") and a Quality Assurance Project Plan ("QAPP"), as described in the Statement of Work and guidances, including, without limitation, "EPA Guidance for Quality Assurance Project Plans (QA/G-5)" (EPA/600/R-02/009, December 2002 or subsequently issued guidance), and "EPA Requirements for Quality Assurance Project Plans (QA/R-5)" (EPA 240/B-01/003, March 2001 or subsequently issued guidance). Upon its approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), the Sampling and Analysis Plan shall be incorporated into and become enforceable under this Order. A Sampling and Analysis Plan shall be prepared for each Supplemental Investigations Work Plan Module. Upon approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), each Sampling and Analysis Plan for a Supplemental Investigations Module shall be incorporated into and become enforceable under this

Order.

(3) Site Health and Safety Plan. Within 30 days after submitting the Interim Report discussed above in subparagraph 54. a.1., Respondent shall submit for EPA review and comment a Site Health and Safety Plan that ensures the protection of on-site workers and the public during performance of on-site Work under this Order. This plan shall be prepared in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992 or subsequently issued guidance). In addition, the plan shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910. If EPA determines that it is appropriate, the plan shall also include contingency planning. Respondent shall incorporate all changes to the plan recommended by EPA and shall implement the plan during the pendency of the Supplemental Investigations. A Health and Safety Plan shall be prepared for each Supplemental Investigations Work Plan Module. Upon approval by EPA pursuant to Section X (EPA Approval of Plans and Other Submissions), each Sampling and Analysis Plan for a Supplemental Investigations Module shall be incorporated into and become enforceable under this Order.

b. Community Relations Plan. EPA will prepare a community relations plan, in accordance with EPA guidance and the NCP. As requested by EPA, Respondent shall provide information supporting EPA's community relations plan and shall participate in the preparation of such information for dissemination to the public and in public meetings which may be held or sponsored by EPA to explain activities at or concerning the Site.

c. Site Characterization. Following EPA approval or modification of the Supplemental Investigations Work Plan(s) and Sampling and Analysis Plan(s), Respondent shall implement the provisions of these plans to characterize the Site. Respondent shall complete the Site characterization and submit all plans, reports and other deliverables in accordance with the schedules and deadlines established in this Order, the SOW, and/or the EPA-approved Supplemental Investigations Work Plan(s) and Sampling and Analysis Plan(s).

d. Reuse Assessment. If EPA, in its sole discretion, determines that a Reuse Assessment is necessary for those areas of the Site other than the Ringwood State Park and the residential properties, Respondent will perform the Reuse Assessment in accordance with the SOW, RI/FS Workplan and applicable guidance. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the those areas of the Site other than the Ringwood State Park and the residential properties. Respondent shall prepare the Reuse Assessment in accordance with EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive," OSWER Directive 9355.7-06P, June 4, 2001 or subsequently issued guidance.

e. Baseline Human Health Risk Assessment and Ecological Risk Assessment. Respondent will perform the Baseline Human Health Risk Assessment and Ecological Risk Assessment ("Risk Assessments") in accordance with the SOW, Supplemental Investigations Work Plans and applicable EPA guidance, including but not limited to: "Interim Final Risk

Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part A)," (RAGS, EPA-540-1-89-002, OSWER Directive 9285.7-01A, December 1989); "Interim Final Risk Assessment Guidance for Superfund, Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)," (RAGS, EPA 540-R-97-033, OSWER Directive 9285.7-01D, January 1998); "Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments" (ERAS, EPA-540-R-97-006, OSWER Directive 9285.7-25, June 1997) or subsequently issued guidance.

f. Draft Supplemental Investigations Report. Within 30 days after EPA's approval of all the Technical Memoranda for all of the SI Modules Work Plans, or within some other time frame specified in the EPA-approved Supplemental Investigations Work Plan, Respondent shall submit to EPA for review and approval pursuant to Section X (EPA Approval of Plans and Other Submissions), a Draft Supplemental Investigations Report consistent with the SOW, Supplemental Investigations Work Plan, including the Supplemental Investigations Modules, and Sampling and Analysis Plans.

55. Modification of the Supplemental Investigations Work Plan.

a. If at any time during the Supplemental Investigations process, Respondent identifies a need for additional data, Respondent shall submit a memorandum documenting the need for additional data to the EPA RPM within 14 days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondent and whether it will be incorporated into plans, reports and other deliverables.

b. In the event of unanticipated or changed circumstances at the Site, Respondent shall notify the EPA RPM by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat or the unanticipated or changed circumstances warrant changes in the Supplemental Investigations Work Plan, including one or more Supplemental Investigations Module Work Plans, EPA shall modify or amend the Supplemental Investigations Work Plans in writing accordingly. Respondent shall perform the Supplemental Investigations Work Plans as modified or amended.

c. EPA may determine that in addition to tasks defined in the initially approved Supplemental Investigations Work Plan, other additional Work may be necessary to accomplish the objectives of the Supplemental Investigations. Respondent shall perform these response actions in addition to those required by the initially approved Supplemental Investigations Work Plan, including any approved modifications, if EPA determines that such actions are necessary to complete the Supplemental Investigations.

d. Respondent shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the Supplemental Investigations Work Plan, including the Supplemental Investigations Modules Work Plans, or written Supplemental Investigations Work Plan supplement. EPA reserves the

right to conduct the Work itself at any point, to seek reimbursement from Respondent, and/or to seek any other appropriate relief.

e. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

56. Off-Site Shipment of Waste Material. Respondent shall, prior to the first off-site shipment of Waste Material from the Site to each out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Designated RPM. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed 10 cubic yards.

a. Respondent shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondent shall notify the state in which the planned receiving facility is located, and EPA's designated RPM, of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. Respondent shall provide the information required by subparagraph 56.a. at least 14 days before the Waste Material is actually shipped, and once every 60 days thereafter.

c. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondent shall obtain EPA's certification that the proposed receiving facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondent shall send hazardous substances, pollutants, or contaminants from the Site only to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

57. Meetings. Respondent shall make presentations at, and participate in, meetings at the request of EPA during the conduct, and completion of the Supplemental Investigations. In addition to discussion of the technical aspects of the Supplemental Investigations, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

58. Progress Reports. In addition to the plans, reports and other deliverables set forth in this Order, Respondent shall provide to EPA monthly progress reports by the 10th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Order during that month, (2) include all descriptions of, and validated data from sampling and tests and all other data received by Respondent, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for Supplemental Investigations completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated

delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

59. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondent shall immediately take all appropriate action. Respondent shall take these actions in accordance with all applicable provisions of this Order, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondent shall also immediately notify the EPA RPM or, in the event of his/her unavailability, the Chief of the New Jersey Remediation Branch at (212) 637-4420, and the 24-hour EPA Superfund/Oil Emergency Hotline at (732) 548-8730 of the incident or Site conditions.

b. In addition, in the event of any release of a hazardous substance from the Site, Respondent shall immediately notify the EPA Project Manager or the EPA Emergency Hotline at (732) 548-8730 and the National Response Center at (800) 424-8802. Respondent shall submit a written report to EPA within 7 days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

60. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Order, in a notice to Respondent EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondent to modify the submission, or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondent at least one notice of deficiency and an opportunity to cure within 21 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

61. In the event of approval, approval upon conditions, or modification by EPA, pursuant to subparagraph 55. (a), (b), (c) or (e), Respondent shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA. Following EPA approval or modification of a submission or portion thereof, Respondent shall not thereafter alter or amend such submission or portion thereof unless directed by EPA.

62. Resubmission.

a. Upon receipt of a notice of disapproval, Respondent shall, within 21 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval.

b. Notwithstanding the receipt of a notice of disapproval, Respondent shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondent of any liability for failure to comply with this Order.

c. Respondent shall not proceed further with any subsequent activities or tasks until receiving EPA approval, approval on condition or modification of the following deliverables: Supplemental Investigations Work Plan(s), Sampling and Analysis Plan(s), and Draft Supplemental Investigations Report(s). While awaiting EPA approval, approval on condition or modification of these deliverables, Respondent shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Order.

d. For all remaining deliverables not listed above in subparagraph 62.c., Respondent shall proceed with all subsequent tasks, activities and deliverables without awaiting EPA approval on the submitted deliverable. EPA reserves the right to stop Respondent from proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the Supplemental Investigations.

63. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondent to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable. Respondent shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA.

64. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondent shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately.

65. In the event that EPA takes over some of the tasks, but not the preparation of the Supplemental Investigations Report(s), Respondent shall incorporate and integrate information supplied by EPA into the final reports.

66. All plans, reports, and other deliverables submitted to EPA under this Order shall, upon approval or modification by EPA, be incorporated into and enforceable under this Order. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Order, the approved or modified portion shall be incorporated into and enforceable under this Order.

67. Neither failure of EPA to expressly approve or disapprove of Respondent's submissions within a specified time period, nor the absence of comments, shall be construed as

approval by EPA. Whether or not EPA gives express approval for Respondent's deliverables, Respondent is responsible for preparing deliverables acceptable to EPA.

XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION

68. Quality Assurance. Respondent shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the SOW, the QAPP and guidances identified therein. Respondent shall assure that field personnel used by Respondent are properly trained in the use of field equipment and in chain of custody procedures. Respondent shall use only laboratories which have a documented quality system that complies with "EPA Requirements for Quality Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA.

69. Sampling.

a. All results of sampling, tests, modeling or other data generated by Respondent, or on Respondent's behalf, during the period that this Order is effective, shall be submitted to EPA in the next monthly progress report as described in Paragraph 58 of this Order. Respondent shall also submit to EPA all raw data as it becomes available. EPA will make available to Respondent validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondent shall verbally notify EPA at least 14 days prior to conducting significant field events as described in the SOWs, Supplemental Investigations Work Plan(s) or Sampling and Analysis Plan(s.) At EPA's verbal or written request, or the request of EPA's oversight representative, Respondent shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) of any samples collected in implementing this Order. All split samples of Respondent shall be analyzed by the methods identified in the QAPP.

70. Access to Information.

a. Respondent shall provide to EPA, upon request, copies of all documents and information within its possession or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Order, including, but not limited to, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondent shall also make available to EPA, for purposes of investigation, information gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondent may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Order to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the

protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA and the State, or if EPA has notified Respondent that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondent. Respondent shall segregate and clearly identify all documents or information submitted under this Order for which Respondent assert business confidentiality claims.

c. Respondent may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If the Respondent asserts such a privilege in lieu of providing documents, it shall provide EPA with the following: 1) the title of the document, record, or information; 2) the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information, and 6) the privilege asserted by Respondent. However, no documents, reports or other information created or generated pursuant to the requirements of this Order shall be withheld on the grounds that they are privileged.

d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

71. In entering into this Order, Respondent waives any objections to any data gathered, generated, or evaluated by EPA, the State or Respondent in the performance or oversight of the Work that has been verified according to the quality assurance/quality control ("QA/QC") procedures required by the Order or any EPA-approved Supplemental Investigations Work Plans or Sampling and Analysis Plans. If Respondent objects to any other data relating to the Supplemental Investigations, Respondent shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days of the monthly progress report containing the data.

XII. SITE ACCESS AND INSTITUTIONAL CONTROLS

72. If any portion of the Site, or any other property where access is needed to implement this Order, is owned or controlled by the Borough, the Borough shall, commencing on the Effective Date, provide EPA, the State, the Performing Party conducting the Work and its representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Order.

73. Where any action under this Order is to be performed in areas not owned by or in possession of someone other than the Borough, the Borough shall use its best efforts to obtain all necessary access agreements within 30 days after the Effective Date, or as otherwise specified in

writing by the EPA RPM. The Borough shall immediately notify EPA if after using its best efforts it is unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondent shall describe in writing its efforts to obtain access. If Respondent cannot obtain access agreements, EPA may either (i) obtain access for Respondent or assist Respondent in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Order. If EPA performs those tasks or activities with EPA contractors and does not terminate the Order, Respondent shall perform all other tasks or activities not requiring access to that property. Respondent shall not be responsible for obtaining access to residential properties for Supplemental Investigations. Respondent shall, however, integrate the results of any tasks or activities undertaken by EPA on residential or other properties into its plans, reports and other deliverables.

74. Notwithstanding any provision of this Order, EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

XIII. COMPLIANCE WITH OTHER LAWS

75. Respondent shall comply with all applicable local, state and federal laws and regulations when performing the Supplemental Investigations. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondent shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Order is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

XIV. RETENTION OF RECORDS

76. During the pendency of this Order and for a minimum of 10 years after commencement of response action at this Site pursuant to this Order, the Respondent shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until 10 years after commencement of construction of any response action, Respondent shall also instruct its contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

77. At the conclusion of this document retention period, Respondent shall notify EPA at least 90 days prior to the destruction of any such documents, records or other information, and,

upon request by EPA, Respondent shall deliver any such documents, records, or other information to EPA. Respondent may assert that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege recognized by federal law. If Respondent asserts such a privilege, it shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondent. However, no documents, records or other information created or generated pursuant to the requirements of this Order shall be withheld on the grounds that they are privileged.

78. As of the effective date of this Order, Respondent shall not alter, mutilate, discard, destroy or otherwise dispose of any records, documents or other information (other than identical copies) relating to its potential liability regarding the Site. Respondent shall comply fully with any and all additional requests by EPA for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

XV. DELAY IN PERFORMANCE/STATUTORY PENALTIES

79. Respondent is liable for the implementation of the Work required by this Order and for compliance with all provisions of this Order. Notwithstanding any other provision of this Order, failure of Respondent to comply with any provision of this Order may subject Respondent to civil penalties of up to \$32,500 per day, as provided in Section 106(b)(1) of CERCLA, 42 U.S.C. § 9606(b)(1), and 40 C.F.R. § 19.4. Respondent may also be subject to punitive damages in an amount at least equal to and not more than three times the amount of any costs incurred by the United States as a result of Respondent's failure to comply with this Order, as provided in Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3.) Should Respondent violate this Order or any portion thereof, EPA may carry out the required actions unilaterally, pursuant to Section 104 of CERCLA, 42 U.S.C. § 9604, and may seek judicial enforcement of this Order pursuant to Section 106 of CERCLA, 42 U.S.C. § 9606.

80. Nothing in this Order shall limit the power and authority of EPA or the United States to take, direct or order all actions necessary to protect public health, welfare or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at or from the Site. Further, nothing shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Order, from taking other legal or equitable action as it deems appropriate, or from requiring the Respondent in the future to perform additional activities pursuant to CERCLA or other applicable law. EPA reserves the right to bring an action against Respondent under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of response costs incurred by the United States related to this Order or the Site.

XVI. OTHER CLAIMS

81. By issuance of this Order, EPA assumes no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondent or Respondent's employees, agents, contractors or consultants in carrying out any action or activity pursuant to this Order. EPA shall not be held out as or deemed a party to any contract entered into by the Respondent or its officers, employees, agents, representatives, assigns, contractors or consultants in carrying out actions pursuant to this Order.

82. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any person, firm, partnership, or corporation not a Respondent to this Order for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release or disposal of any hazardous substances, pollutants or contaminants found at, taken to, or taken from the Site.

XVII. INSURANCE

83. At least seven days prior to commencing any On-Site Work under this Order, Respondent shall secure, and shall maintain for the duration of this Order, comprehensive general liability insurance with limits of \$20 million and automobile insurance with limits of \$3 million, combined single limit, and shall obtain endorsements on the policies identifying EPA as an additional insured. Within the same period, Respondent shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondent shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Order, Respondent shall satisfy, or shall ensure that its contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of worker's compensation insurance for all persons performing the Work on behalf of Respondent in furtherance of this Order. If Respondent demonstrates by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondent need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

XVIII. FINANCIAL ASSURANCE

84. Within 30 days of the Effective Date, Respondent shall establish and maintain financial security for the benefit of EPA in the amount of \$ 3 million in one or more of the following forms, in order to secure the full and final completion of Work by Respondent:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work;

c. a trust fund administered by a trustee acceptable in all respects to EPA;

d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work, and/or

e. a corporate guarantee to perform the Work provided by one or more unrelated corporations that have a substantial business relationship with Respondent; including a demonstration that any such company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f).

85. If Respondent seeks to provide a demonstration of financial assurance under 40 C.F.R. § 264.143(f) and has provided a similar demonstration at other RCRA or CERCLA sites, the amount for which it is providing financial assurance at those sites must be added to the estimated costs of the Work set forth in Paragraph 84. Respondent must provide documentation of any and all prior demonstrations currently in effect.

86. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondent shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 80, above. In addition, if at any time EPA notifies Respondent that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondent shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondent's inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Order.

87. If Respondent seeks to ensure completion of the Work through a guarantee pursuant to subparagraph 84.e. of this Order, Respondent shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Order, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the current cost estimate of \$ 3 million for the Work at the Site shall be used in relevant financial test calculations.

88. If, after the Effective Date, Respondent can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 84 of this Section, Respondent may, on any anniversary date of the Effective Date, or at any other time agreed to by EPA, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondent shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the

security after receiving written approval from EPA.

89. Respondent may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section.

XIX. INTEGRATION/APPENDICES

90. This Order and its appendices and any technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), and other deliverables that will be developed pursuant to this Order and become incorporated into and enforceable under this Order constitute the final, complete and exclusive terms of the Order.

"Appendix A" includes the SOW, with attached approved Supplemental Investigations Work Plan.

"Appendices B(1) and B(2)" are the maps of the Site.

XX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

91. This Order shall be effective ten days after the Order is signed by the Director of the Emergency and Remedial Response Division of Region II or his delegatee, unless a conference is timely requested pursuant to Paragraph 95 below. If a conference is timely requested pursuant to Paragraph 95 below, the Order shall become effective five days following the date the conference is held, unless the effective date is modified by EPA. All times for performance of the ordered activities shall be calculated from the effective date established under this paragraph.

92. No informal advice, guidance, suggestion, or comment by the EPA RPM or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondent shall be construed as relieving Respondent of its obligation to obtain any formal approval required by this Order, or to comply with all requirements of this Order, unless it is formally modified.

XXI. TERMINATION AND SATISFACTION

93. This Order shall terminate when Respondent demonstrates in writing and certifies to the satisfaction of EPA that all activities required under this Order, including any additional Work, have been performed and EPA approves the certification. This notice of termination shall not terminate Respondent's obligation to comply with the Record Retention requirements of the Order.

94. The certification shall be signed by a responsible official representing the Respondent. The official shall make the following attestation: "I certify that the information contained in or

accompanying this certification is true, accurate, and complete.

XXII. OPPORTUNITY TO CONFER

95. Respondent may, within five days after this Order is received by Respondent, request a conference with EPA to discuss this Order. If requested, the conference shall occur within seven days of Respondent's request for a conference.

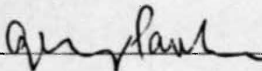
96. The purpose and scope of the conference shall be limited to issues involving the implementation of the work required by this Order and the extent to which Respondent intends to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondent a right to seek review of this Order or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At any conference held pursuant to Respondent's request, Respondent may appear by an attorney or other representative.

97. A request for a conference must be made by telephone to Virginia A. Curry, Esq., Assistant Regional Counsel, EPA Region II, at (212) 637-3134, followed by written confirmation mailed that day to Ms. Curry and EPA RPM Joseph Gowers at the address set forth in Paragraph 51 of this Order.

XXIII. NOTICE OF INTENT TO COMPLY

98. Respondent shall provide, not later than ten days after the effective date of this Order, written notice to EPA stating whether it will comply with the terms of this Order and specifying Respondent's proposed manner of compliance with this Order. Respondent's written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondent under Sections 106(b) and 107(c)(3) of CERCLA. The written notice shall be sent to Division Director George Pavlou at the address given in Paragraph 51 with copies to Ms. Curry and Mr. Gowers. The absence of a response by EPA to the notice required by this paragraph shall not be deemed to be an acceptance of Respondent's assertions.

It is so ORDERED this 21st day of September, 2005

BY: 

George Pavlou, Director
Emergency and Remedial Response Division
Region II
U.S. Environmental Protection Agency

STATEMENT OF WORK FOR
SUPPLEMENTAL INVESTIGATIONS AT THE
RINGWOOD MINES/LANDFILL SITE
RINGWOOD, NEW JERSEY

APPENDIX A

I. INTRODUCTION

1. The purpose of these Supplemental Investigations (SI) is to supplement the existing information provided by the previous Remedial Investigation by further investigating the extent of site-related contamination remaining at the Ringwood Mines/Landfill Site (the Site).

2. The Respondent shall conduct this SI pursuant to approved Work Plans for separate modules which cover investigative activities for separate areas of the Site (SI Work Plan Modules). These approved SI Work Plan Modules shall, when combined, comprise the SI Work Plan for the Site. When the Respondent has completed all the work conducted pursuant to the Site SI Work Plan, Respondent shall produce a draft SI Report that complies with this Statement of Work (SOW), the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, Office of Emergency and Remedial Response, October 1988), and any other relevant guidance that EPA uses in conducting a Remedial Investigation and Feasibility Study (RI/FS), as well as any additional requirements in the administrative order. The RI/FS Guidance describes the report format and the required report content. The Respondent shall furnish all necessary personnel, materials, and services needed, or incidental to, performing the SI, except as otherwise specified in the administrative order.

3. Respondent shall not conduct any fieldwork required pursuant to these SI Work Plan Modules prior to EPA's approval of the associated SI Work Plan Module.

4. As specified in CERCLA Section 104(a)(1), as amended by SARA, EPA will provide oversight of the Respondent's activities throughout the SI. The Respondent shall support EPA's initiation and conduct of activities related to the implementation of oversight activities.

5. The Respondent shall submit to EPA 4 paper copies of all plans, reports and other deliverables required under the Settlement Agreement, this SOW and the SI Work Plan or SI

Work Plan Modules. The Respondent shall also provide EPA with one electronic copy of all plans, reports and other deliverables required under the Settlement Agreement and SOW, and 4 extra paper copies of all diagrams, figures and/or drawings incorporated into these deliverables. At the same time, the Respondent shall submit to the New Jersey Department of Environmental Protection 3 copies of all plans, reports and other deliverables required under the Settlement Agreement, the SOW and the SI Work Plan or SI Work Plan Modules.

II. REQUIRED WORK AND SCHEDULE

A. FIELD RECONNAISSANCE SURVEY

1. The Respondent shall continue to implement the EPA-approved Work Plan for the Field Reconnaissance Survey (FRS Work Plan), with the conditions specified in EPA's December 2, 2004 letter commenting on the Draft FRS Work Plan submittal. The Respondent shall complete all fieldwork required pursuant to the FRS Work Plan within 30 days of the effective date of the attached Settlement Agreement.

2. Within 30 days of completion of the field investigations provided for in the FRS Work Plan, the Respondent shall submit an FRS Technical Memorandum which summarizes the results of the field investigations.

B. SUPPLEMENTAL INVESTIGATIONS WORK PLAN

1. Within thirty (30) days after submitting the FRS Technical Memorandum, the Respondent shall submit to EPA a Supplemental Investigation (SI) Work Plan. The SI Work Plan shall identify all SI Work Plan Modules and provide a schedule for the conduct and completion of work to be performed pursuant to each of the SI Work Plan Modules, with the exception of the FRS Work Plan. This schedule shall be consistent with section II.B.4 of this SOW. Respondent shall prepare or revise SI Work Plan Modules for the following areas/activities: a) Stream Sediment/Surface Water Sampling; b) Peters Mine Pit Area; c) Cannon Mine Pit Area; d) O'Connor Disposal Area, and e) Other Areas identified in the FRS Technical Memorandum as requiring additional investigation. Each SI Work Plan Module shall include a Sampling and Analysis Plan (FSAP) and a Health and Safety Plan (HASp) as described below.

a. The FSAP shall include a Quality Assurance/Quality Control Project Plan (QAPP), or incorporate by reference an EPA-approved QAPP from a previous approved SI Work Plan Module, if appropriate. The QAPP shall be prepared consistent with "EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations" (EPA QA/R-5, October 1998), and shall include the following elements:

i. A detailed description of the sampling, analysis, and monitoring that shall be performed during implementation of the SI Work Plan Module, consistent with this Order.

ii. All sampling, analysis, data assessment, and monitoring shall be performed in accordance with the "Region II CERCLA Quality Assurance Manual," Revision 1, EPA Region 2, dated October 1989, and any updates thereto, or an alternate EPA-approved test method, and the guidelines set forth in this Order. All testing methods and procedures shall be fully documented and referenced to established methods or standards.

iii. The QAPP shall also specifically include the following items:

a. An explanation of the way(s) the sampling, analysis, testing, and monitoring shall produce data for the SI;

b. A detailed description of the sampling, analysis, and testing to be performed, including sampling methods, analytical and testing methods, sampling locations and frequency of sampling;

c. A map depicting sampling locations; and

d. A schedule for performance of specific tasks.

iv. The Respondent shall submit an addendum to the QAPP for EPA approval in the event that additional SI work is required that involves testing or analyses which differ from those approved in the QAPP.

v. The QAPP shall address the following elements:

Project Management

- a. Title and Approval Sheet
- b. Table of Contents and Document Control Format
- c. Distribution List
- d. Project/Task Organization and Schedule
- e. Problem Definition/Background
- f. Project/Task Description
- g. Quality Objectives and Criteria for Measurement Data
- h. Special Training Requirements and Certification
- i. Documentation and Records

Measurement/Data Acquisition

- j. Sampling Process Design
- k. Sampling Methods Requirements
- l. Sample Handling and Custody Requirements
- m. Analytical Methods Requirements
- n. Quality Control Requirements
- o. Instrument/Equipment Testing, Inspection, and Maintenance Requirements
- p. Instrument Calibration and Frequency
- q. Inspection/Acceptance Requirements for Supplies and Consumables
- r. Data Acquisition Requirements (Non-Direct Measurements)
- s. Data Management

Assessment/Oversight

- t. Assessments and Response Actions
- u. Reports to Management

Data Validation and Usability

- v. Data Review, Validation, and Verification Requirements
 - w. Validation and Verification Methods
 - x. Reconciliation with Data Quality Objectives
- vi. In order to provide quality assurance and maintain quality control with respect to all samples to be collected, the Respondent shall ensure the following:

a. Quality assurance and chain-of-custody procedures shall be performed in accordance with standard EPA protocol and guidance, including the "Region II CERCLA Quality Assurance Manual," Revision 1, EPA Region 2, dated October 1989, and any updates thereto, and the guidelines set forth in this Settlement Agreement.

b. The laboratory to be used must be specified. If the laboratory participates in the Contract Laboratory Program (CLP) for the analysis to be performed for this investigation, then Performance Evaluation (PE) samples shall not be required, as CLP laboratories run EPA PEs on a quarterly basis. If the proposed laboratory does not participate in the CLP for the analyses required, PE samples must be analyzed to demonstrate the capability to conduct the required analysis prior to being approved for use. Once a non-CLP laboratory has been selected, the laboratory must submit a copy of its Laboratory Quality Assurance Program Plan (LQAPP) to EPA for review and approval.

For any analytical work performed, including that done in a fixed laboratory, in a mobile laboratory, or in on-site screening analyses, the Respondent must submit to EPA a "Non-CLP

Superfund Analytical Services Tracking System" form for each laboratory used during a sampling event, within thirty (30) days after acceptance of the analytical results. Upon completion, The Respondent shall submit these documents to the EPA Project Coordinator, with a copy of the form and transmittal letter to:

Regional Sample Control Center
Coordinator
U.S. EPA Region 2
Division of Environmental Science &
Assessment
2890 Woodbridge Avenue, Bldg. 209, MS-
215
Edison, NJ 08837

c. The laboratory used for analyses of samples must perform all analyses according to accepted EPA methods as documented in the "Contract Lab Program Statement of Work for Organic Analysis, (OLM04.2)" or the latest revision, and the "Contract Lab Program Statement of Work for Inorganic Analysis, (ILM04.0)" or the latest revision, or other EPA approved methods.

d. Unless indicated otherwise in the approved QAPP, all data shall be validated upon receipt from the laboratory.

e. The Respondent must submit the validation package (checklist, report and Form Is containing the final data) to EPA, prepared in accordance with the provisions of subparagraph g., below.

f.- The Respondent must ensure that all analytical data that are validated as required by the QAPP are validated according to the procedures stated in the "EPA Region II Contract Lab Program Organics Data Review and Preliminary Review (SOP #HW-6, Revision 11)," dated

June 1996, or the latest revision, and the "Evaluation of Metals Data for the Contract Laboratory Program (SOP #HW-2, Revision 11)," dated January 1992 or the latest revision, or EPA-approved equivalent procedures. Region 2 Standard Operating Procedures are available at:

<http://www.epa.gov/region02/smb/sops.htm>

g. Unless indicated otherwise in the QAPP, The Respondent shall require the laboratories used for analyses of samples to produce data packages equivalent to CLP laboratory data packages for analytical data. Upon EPA's request, The Respondent shall submit to the EPA the full documentation (including raw data) for this analytical data. EPA reserves the right to perform an independent data validation, data validation check, or qualification check on generated data.

h. The Respondent shall insert a provision in each contract with a laboratory used for analyses of samples requiring the laboratory to grant access to EPA personnel and authorized representatives for the purpose of ensuring the accuracy of laboratory results related to the Site.

b. Respondent shall prepare a Health and Safety Plan (HASP) in accordance with EPA's Standard Operating Safety Guide (PUB 9285.1-03, PB 92-963414, June 1992 or subsequently issued guidance). In addition, the HASP shall comply with all currently applicable Occupational Safety and Health Administration ("OSHA") regulations found at 29 C.F.R. Part 1910.

c. Following approval or modification by EPA, the SI Work Plan Modules shall be deemed to be incorporated into this Settlement Agreement by reference.

2. SI Work Plan Modules that have not been submitted to EPA prior to completion of the SI Work Plan shall be submitted to EPA with the SI Work Plan.

3. The SI Work Plan shall also include a schedule for submittal of Risk Assessments, as provided for in Sections D and E of this Statement of Work. The SI Work Plan shall also include a schedule for submittal of a Reuse Assessment, as provided for in Section F of this Statement of Work, if EPA determines that a Reuse Assessment is necessary.

4. The Respondent must initiate fieldwork on each SI Work Plan Module within 30 days of EPA's approval of that Module. Furthermore, the Respondent must complete the work to be performed under each SI Work Plan Module, with the exception of the FRS Work Plan, and submit Technical Memoranda summarizing the results of the work within 8 months of the date EPA approves the respective SI Work Plan Module, unless a different period is specified or agreed to in writing by EPA.

5. The Respondent shall notify EPA at least two weeks in advance of the planned dates for any field activities to be performed pursuant to the SI Work Plan or any SI Work Plan Module, in order to provide sufficient time for EPA to arrange for oversight of the fieldwork and split sample collection.

6. If EPA disapproves, or requires revisions to, the SI Work Plan or any SI Work Plan Module, the Respondent shall amend and submit to EPA a revised SI Work Plan or SI Work Plan Module which is responsive to the directions in all EPA comments, within twenty-one (21) days of receiving EPA's comments unless a different period is specified or agreed to in writing by EPA.

C. COMMUNITY RELATIONS PLAN

EPA may make revisions to the Community Relations Plan as necessary and in accordance with EPA guidance and the NCP. To the extent requested by EPA, the Respondent shall provide information supporting EPA's community relations programs.

D. BASELINE HUMAN HEALTH RISK ASSESSMENT

The Respondent shall prepare a Baseline Human Health Risk Assessment (BHHRA) for the Site. The Respondent shall provide EPA with the following deliverables:

1. Baseline Human Health Risk Assessment (BHHRA). This assessment shall include actual and potential cancer risks and non-cancer hazards to human health which are identified and characterized in accordance with CERCLA, the NCP, and EPA guidances including, but not limited to, the RI/FS Guidance, "Land Use in the CERCLA Remedy Selection Process" (OSWER Directive No. 9355.7-04) and the definitions and provisions of "Risk Assessment Guidance for Superfund ("RAGS")," Volume 1, "Human Health Evaluation Manual," (December 1989) (EPA/540/1-89/002).

The assessment shall also include a description of representative contaminants and associated concentrations in Site media including groundwater, soil, sediment, and surface water which have been determined by using all currently available media-specific analytical data generated during the SI.

The information required shall be presented in the following deliverables:

- a. Memorandum on Exposure Scenarios and Assumptions. Within 45 days after approval of the SI Work Plan, the Respondent shall submit a memorandum describing the exposure scenarios and assumptions, taking into account for the BHHRA the present and reasonably anticipated future land use of the Site. The memorandum should include appropriate text describing the preliminary conceptual Site model and exposure routes of concern for the Site, and include a completed RAGS Part D Table 1. This table shall describe the pathways that will be evaluated in the BHHRA, the rationale for their selection, and a description of those pathways that will not be evaluated. In addition, the Memorandum shall include a completed RAGS Part D Table 4 describing the

exposure pathway parameters with appropriate references to EPA's 1991 Standard Default Assumptions and updated guidance developed by EPA. If EPA disapproves of or requires revisions to the memorandum, in whole or in part, it will provide written reasons for the disapproval or directions for revisions to make the submittal approvable. The Respondent shall amend and submit to EPA a revised memorandum which is responsive to the directions in all EPA comments, within twenty-one (21) days of receiving EPA's comments, unless a different period is specified or agreed to in writing by EPA.

b. Pathway Analysis Report (PAR). The Respondent shall prepare and submit a PAR within sixty (60) days after receipt of the last set of validated data generated as part of the SI work. The PAR shall be developed in accordance with OSWER Directive 9285.7-01D-1 dated December 17, 1997 (or more recent version), entitled, "*Risk Assessment Guidelines for Superfund Part D*" and other appropriate guidance in Appendix 1A and updates thereto. The PAR shall contain all the information necessary for a reviewer to understand how the risks at the Site will be assessed. The PAR shall build on the Memorandum on Exposure Scenarios and Assumptions (see a. above) describing the risk assessment process and how the risk assessment will be prepared. The PAR shall include completed RAGS Part D Tables 2, 3, 5, and 6 as described below. The Respondent shall submit the PAR for EPA review and approval. Respondent must obtain EPA approval of the PAR prior to Respondent's submission of the draft BHHRA.

i. Chemicals of Concern (COCs). The PAR shall contain all the information necessary about the COCs at the Site for a reviewer to understand how the risks at the Site will be evaluated.

A. Based on the data obtained during the SI, the Respondent shall list the

hazardous substances present in all sampled media (e.g., groundwater, soils, sediment, etc.) and the contaminants of potential concern ("COPCs") as described in the Risk Assessment Guidance for Superfund Part A.

B. Table 2-Selection of COCs. Representative contaminants and associated concentrations in sample media for the PAR shall be determined utilizing all currently available media-specific validated analytical data generated during the SI. The selection of COCs shall follow Risk Assessment Guidance for Superfund (Part A) and before chemicals are deleted as COCs they shall be evaluated against the residential PRGs from Region IX. The COCs shall be presented in completed RAGS Part D Table 2 format.

ii. Table 3 - Media Specific Exposure Point Concentrations. Using the chemicals selected in Table 2, this Table shall summarize the Exposure Point Concentrations for all COCs for the various media. The calculation of the Exposure Point Concentration shall follow the 1992 Guidance Document on the calculation of the 95% Upper Confidence Limit (UCL) on the Mean. In those cases where the 95% UCL exceeds the maximum, the maximum concentration shall be used as the EPC.

iii. Tables 5 and 6 - Toxicological Information. This section of the PAR shall provide the toxicological data (e.g., Cancer Slope Factors, Reference Doses, Reference Concentrations, Weight of Evidence for Carcinogens, and adjusted dermal toxicological factors where appropriate) for the chemicals of concern. The toxicological data shall be presented in completed RAGS Part D Tables 5 and 6. The source of data in order of priority are: EPA's Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST)-1997 and

contact with EPA's National Center for Environmental Assessment. To facilitate a timely completion of the PAR, the Respondent shall submit a list of chemicals for which IRIS values are not available to EPA as soon as identified thus allowing EPA to facilitate obtaining this information from EPA's National Center for Environmental Assessment.

iv. If EPA disapproves, or requires revisions to, the PAR, in whole or in part, the Respondent shall amend and submit to EPA a revised PAR which is responsive to the directions in all of EPA's written comments within 21 days of receipt of EPA's comments, unless a different period is specified or agreed to in writing by EPA.

c. Baseline Human Health Risk Assessment

i. Within sixty (60) days of EPA's approval of the PAR, the Respondent shall submit to EPA a Draft BHHRA. The submittal shall include completed RAGS Part D Tables 7 through 10 summarizing the calculated cancer risks and non-cancer hazards and appropriate text in the risk characterization with a discussion of uncertainties and critical assumptions (e.g., background concentrations and conditions). The Respondent shall perform the BHHRA in accordance with the approach and parameters described in the approved Memorandum of Exposure Scenarios and Assumptions and the PAR describe above. Text and tables from these previously approved reports shall be included in the appropriate sections of the BHHRA.

ii. If EPA disapproves or requires revisions to the BHHRA, in whole or in part, it will provide written reasons for the disapproval or directions for revisions to make the submittal approvable. The Respondent shall amend and submit to EPA a revised report which is responsive to the directions in all EPA comments, within 21 days of receiving EPA's comments, unless a different period is specified or agreed to in writing by EPA.

E. ECOLOGICAL RISK ASSESSMENT

1. Screening-Level Ecological Risk Assessment (SLERA)

Within sixty (60) days after receipt of the last set of validated data from the SI, the Respondent shall submit a Screening-Level Ecological Risk Assessment (SLERA) in accordance with current Superfund ecological risk assessment guidance (Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments [ERAGS], USEPA, 1997 [EPA/540-R-97-006]). The SLERA shall include a comparison of the maximum contaminant concentrations in each media of concern to appropriate conservative ecotoxicity screening values, and should use conservative exposure estimates. EPA will review and approve the SLERA and determine whether a full updated Baseline Ecological Assessment is required.

2. Full Baseline Ecological Risk Assessment (BERA)

a. If EPA determines that a full updated Baseline Ecological Assessment (BERA) is required and so notifies the Respondent, the Respondent shall, within thirty (30) days thereafter, submit a Scope of Work outlining the steps and data necessary to perform the BERA, including any amendments to the SI Work Plan required to collect additional relevant data. If EPA disapproves of or requires revisions to the BERA Scope of Work, in whole or in part, the Respondent shall amend and submit to EPA a revised Scope of Work that is responsive to the directions in all of EPA's written comments within twenty-one (21) days of receipt of EPA's comments, unless a different period is specified or agreed to in writing by EPA. The BERA Scope of Work shall identify any SI Work Plan amendments or addenda, including establishment of a schedule for review and approval of additional field data.

b. The Respondent shall notify EPA in writing within seven (7) days of completion of all field activities associated with the BERA, as identified in the BERA Scope of Work and performed under the approved SI Work Plan addenda.

c. The Respondent shall prepare a draft BERA Report which identifies and characterizes actual and potential ecological risks in accordance with CERCLA, the NCP, and EPA guidances including, but not limited to, "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments,"

(1997) (EPA/540-R-97-006), ERAGS, dated June 5, 1997, or other most recent guidance.

d. The Draft BERA Report shall include:

1. Hazard Identification (sources). The Respondent shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern.

2. Dose-Response Assessment. The Respondent shall identify and select contaminants of concern based on their intrinsic toxicological properties.

3. Characterization of Site and Potential Receptors. The Respondent shall identify and characterize environmental exposure pathways.

4. Select Chemicals, Indicator Species, and End Points. In preparing the assessment, The Respondent shall select representative chemicals, indicator species (species which are especially sensitive to environmental contaminants), and end points on which to concentrate.

5. Exposure Assessment - The exposure assessment shall identify the magnitude of actual or environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondent shall develop central tendency and reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the Site.

6. Toxicity Assessment/Ecological Effects Assessment. The toxicity and ecological effects assessment shall address the types of adverse environmental effects associated with

chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., weight of evidence for a chemical's carcinogenicity).

7. Risk Characterization. During risk characterization, chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, shall be compared to measured contaminant exposure levels and the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or near the Site are affecting or could potentially affect the environment.

8. Identification of Limitations/ Uncertainties. The Respondent shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.

9. Site Conceptual Model. Based on contaminant identification, exposure assessment, toxicity assessment, and risk characterization, the Respondent shall develop a conceptual model of the Site.

e. The Respondent shall submit the draft updated BERA Report to EPA within sixty (60) days of obtaining the final set of BERA-related validated data.

f. If EPA disapproves of or requires revisions to, the updated BERA Report, in whole or in part, such disapproval or required revisions shall be provided in writing with reasons for the disapproval or directions for revisions to make the submittal approvable. The Respondent shall amend and submit to EPA a final, updated ecological assessment which is responsive to the directions in all EPA comments.

g. Final Baseline Ecological Risk Assessment Report. Within 21 days of receiving EPA's comments on the Draft BERA Report, the Respondent shall amend and submit to

EPA a final report which is responsive to the directions in all EPA comments.

F. REUSE ASSESSMENT

If EPA, in its sole discretion, determines that a Reuse Assessment is necessary, the Respondent will perform the Reuse Assessment in accordance with this SOW, RI/FS Wordplay and applicable guidance. The Reuse Assessment should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site. If required, the Respondent shall prepare the Reuse Assessment in accordance with EPA guidance, including, but not limited to: "Reuse Assessments: A Tool To Implement The Superfund Land Use Directive," OSWER Directive 9355.7-06P, June 4, 2001 or subsequently issued guidance. The Respondent shall submit a required Reuse Assessment no later than the date when the SI Report is submitted.

G. SUPPLEMENTAL INVESTIGATIONS REPORT

a. The Respondent shall prepare an SI Report, which shall incorporate the results of investigations conducted in accordance with all SI Work Plan Modules, including the FRS Work Plan, the Work Plan for Investigation of the Peters Mine Pit Area, the Work Plan for Stream Sediment/Surface Water Sampling and any other modules that have been required. The Respondent shall incorporate the results of any investigations conducted by EPA on residential properties at the Site into the SI Report.

b. The SI Report shall be submitted to EPA within 30 days of EPA's approval of all of the Technical Memoranda for all of the SI Work Plan Modules conducted by Respondent.

REFERENCES FOR CITATION

The following list, although not comprehensive, includes many of the regulations and guidance documents that apply to the RI/FS process:

The (revised) National Contingency Plan

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01

"Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.

"Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, OSWER Directive No. 9835.3

"A Compendium of Superfund Field Operations Methods," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

"EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, EPA-330/9-78-001-R.

"Data Quality Objectives for Remedial Response Activities," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

"Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

"Interim Guidelines and Specifications for Quality Assurance Project Plans," U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

"Users Guide to the EPA Contract Laboratory," U.S. EPA, Sample Management Office, August 1982.

"Interim Guidance with Applicable or Relevant and Appropriate Requirements," U.S. EPA, Office of Emergency and Remedial Response, July 9, 1987, OSWER Directive No. 9234.0-05.

"CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (draft), OSWER Directive No. 9234.1-01 and -02.

"Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," U.S. EPA, Office of Emergency and Remedial Response, (draft), OSWER Directive No. 9283.1-2.

"Draft Guidance on Superfund Decision Documents," U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.-02

"Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual" (Part A), EPA/540/1-89/002

"Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual" (Part B), EPA/540/R-92/003

"Risk Assessment Guidance for Superfund - Volume II Environmental Evaluation Manual," March 1989, EPA/540/1-89/ 001

"Guidance for Data Useability in Risk Assessment," October, 1990, EPA/540/G-90/008

"Performance of Risk Assessments in Remedial Investigation/Feasibility Studies (RI/FSs) Conducted by Potentially Responsible Parties (PRPs)," August 28, 1990, OSWER Directive No.9835.15.

"Risk Evaluation of Remedial Alternatives" (Part C), December 1991, OSWER Directive 9285.7-01C.

"Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.

"Supplemental Guidance to RAGS: Calculating the Concentration Term," May 1992, OSWER Directive 9285.7-081.

"Health and Safety Requirements of Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).

"Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

"Community Relations in Superfund: A Handbook," U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.0#3B.

"Community Relations During Enforcement Activities And Development of the Administrative Record," U.S. EPA, Office of Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1a..

